

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
	)	
Inquiry Concerning the Deployment of	)	GN Docket No. 16-245
Advanced Telecommunications Capability to	)	
All Americans in a Reasonable and Timely	)	
Fashion, and Possible Steps to Accelerate Such	)	
Deployment Pursuant to Section 706 of the	)	
Telecommunications Act of 1996, as Amended	)	
by the Broadband Data Improvement Act	)	

**REPLY COMMENTS OF T-MOBILE USA, INC.**

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**I. INTRODUCTION AND SUMMARY**

T-Mobile USA, Inc. (“T-Mobile”)<sup>1</sup> respectfully submits these reply comments in response to the Twelfth Broadband Progress Notice of Inquiry (“*Twelfth NOI*”).<sup>2</sup> In the *Twelfth NOI*, the Commission seeks comment on the deployment and availability of advanced telecommunications capability to all Americans.

Section 706 of the Telecommunications Act of 1996 obligates the Commission to “take immediate action” to accelerate the availability of advanced telecommunications services “by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.”<sup>3</sup> But constraints on critical input resources required for healthy competition continue to impede the availability of broadband services. By removing barriers to

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<sup>1</sup> T-Mobile USA, Inc. is a wholly owned subsidiary of T-Mobile US, Inc., a publicly-traded company.

<sup>2</sup> *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, Twelfth Broadband Progress Notice of Inquiry, GN Docket No. 16-245, FCC 16-100 (rel. Aug. 4, 2016) (“*Twelfth NOI*”).

<sup>3</sup> 47 U.S.C. § 1302(b).

deployment, improving access to spectrum, ensuring fair data roaming agreements, and promoting experimentation and innovation, the Commission can satisfy Congress's goal of ensuring that all Americans have access to mobile broadband services.

## **II. ALLOCATING MORE SPECTRUM FOR WIRELESS BROADBAND SERVICE PROMISES TO SUPPORT ENTREPRENEURSHIP, ACCELERATE EDUCATION, AND ENCOURAGE CIVIC ENGAGEMENT BY CONNECTING MORE PEOPLE TO VALUABLE INFORMATION**

T-Mobile is the fastest growing wireless company in America. In the second quarter of 2016, T-Mobile added 1.9 million customers to its network—the thirteenth consecutive quarter with more than one-million new subscribers.<sup>4</sup> T-Mobile's success is due in large part to a series of “Un-carrier” moves that have eradicated consumer pain points like long-term service contracts, device lock-ins, international roaming charges, and data overages.<sup>5</sup> T-Mobile's latest move, Un-carrier 12, offers consumers a simple subscription to the mobile Internet with unlimited talk, text, and high-speed data without data limits or overages.<sup>6</sup>

T-Mobile also has greatly expanded the geographic reach of its 4G LTE network. Last year, T-Mobile increased its LTE coverage footprint by nearly 250 percent, deploying 4G LTE to almost one-million new square miles of the U.S.<sup>7</sup> The company now covers 312 million

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<sup>4</sup> See Press Release, T-Mobile, T-Mobile Again Delivers Industry-Leading Customer and Financial Results (July 27, 2016), <http://t-mo.co/2adiiah>. The company recently projected even stronger growth for the third quarter of 2016. See Press Release, T-Mobile, T-Mobile Continues to see Strong Momentum in Q3 2016 (Sept. 20, 2016), <http://t-mo.co/2dfnoZu>.

<sup>5</sup> T-Mobile's “JUMP! On Demand” program, for instance, allows customers to upgrade their phones for free three times a year. See Press Release, T-Mobile, T-Mobile Unveils All-New ‘JUMP! On Demand’ - a Whole New Way to Get a Phone Whenever You Want (June 25, 2015), <http://t-mo.co/1TVLBxa>.

<sup>6</sup> See Press Release, T-Mobile, Hello Un-carrier 12...R.I.P. Data Plans; T-Mobile Goes All In on Unlimited (Aug. 18, 2016), <http://t-mo.co/2bE8QBI>.

<sup>7</sup> See Press Release, T-Mobile, DNC & RNC Network Upgrades (June 27, 2016), <http://t-mo.co/29hw78t>.

Americans with 4G LTE<sup>8</sup> and covers more than 200 million POPs across more than 350 markets with “Extended Range LTE” service using its Lower 700 MHz Band spectrum.<sup>9</sup> While broadening its geographic coverage, T-Mobile has been simultaneously strengthening its network. T-Mobile has the most advanced LTE network in the country. In September 2016, T-Mobile introduced 4x4 MIMO (multiple input, multiple output) in 319 cities.<sup>10</sup> This technology doubles the number of data paths between a cell site and a phone, resulting in up to twice the data speed.<sup>11</sup> T-Mobile also recently launched new quadrature amplitude modulation technologies that, when combined with 4x4 MIMO, increase download speeds up to 400 Mbps.<sup>12</sup>

T-Mobile’s recent technology advancements squeeze greater efficiency out of currently available spectrum, but access to adequate spectrum resources is critical to satisfy growing demand. The Commission has recognized that spectrum, and in particular low-band spectrum, is a critical input for mobile broadband service.<sup>13</sup> Where T-Mobile has acquired spectrum, T-Mobile has quickly deployed it. Ensuring that the 600 MHz band spectrum becomes available for broadband use as quickly as possible and making additional licensed spectrum available for 5G services will help T-Mobile and other broadband providers deploy service more quickly and cost effectively than possible if spectrum resources remain as constrained and concentrated as they are today.

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<sup>8</sup> See Neville Ray, *LTE Advanced is so 2014. We’re already on to the next big thing. Verizon is now 50% faster ... and still slower than T-Mobile!*, T-Mobile (Sept. 6, 2016), <http://t-mo.co/2c4iE18> (“Neville Ray Blog Post”).

<sup>9</sup> See T-Mobile, T-Mobile Investor Factbook Q2 2016, at 2 (2016), <http://t-mo.co/2cWy3I5>.

<sup>10</sup> See Neville Ray Blog Post.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

<sup>13</sup> See *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, Eighteenth Report, 30 FCC Rcd 14515 ¶ 47 (2015) (“*Eighteenth Mobile Competition Report*”).

**A. An efficient reconfiguration of the 600 MHz band will help ensure timely deployment of 4G and 5G services**

The 600 MHz band is the most immediate—and potentially one of the few remaining—opportunities for the Commission to make a significant amount of low-band spectrum available for mobile broadband service. The Commission recognized the importance of making additional low-band spectrum available for mobile broadband service when it set a 39-month deadline for broadcasters to transition out of the 600 MHz band.<sup>14</sup> Economists project a decline in consumer surplus if wireless carriers are delayed in accessing 600 MHz spectrum.<sup>15</sup> According to one study, the annual loss of consumer surplus for delayed access to spectrum is roughly equivalent to the total revenue from the auction.<sup>16</sup> These unrealized net revenues and consumer surplus losses cannot be recovered.<sup>17</sup>

The 39-month post-auction transition period is achievable if broadcasters are transitioned out of the band in an orderly way. The FCC can maximize the benefits of a successful auction by promptly clearing less complex, less densely populated markets while simultaneously commencing work in more complicated, urban environments.<sup>18</sup> Consumers deserve access to the high-speed, high-capacity mobile broadband services that 600 MHz spectrum can deliver, and

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<sup>14</sup> *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567 ¶ 572 (2014) (noting that a lengthier transition period could discourage forward auction participation, depress the value of investments made by forward auction winners, and delay the deployment of innovative services).

<sup>15</sup> See, e.g., Coleman Bazelon & Giulia McHenry, *Staying on Track: Realizing the Benefits from the FCC's Incentive Auction Without Delay* (Feb. 20, 2015), reproduced in Comments of LocusPoint Networks, LLC, AU Docket 14-252 (Feb. 20, 2015).

<sup>16</sup> *Id.* at 9.

<sup>17</sup> *Id.* at 13.

<sup>18</sup> T-Mobile has proposed a repacking sequence that would seek “quick wins” and prioritize clearing from the less complex broadcast markets into the more complex urban centers – both to simplify the clearing tasks necessary in the more complicated markets and to provide broadcasters in the complex markets ample time to prepare for clearing. See *Ex Parte* Letter from Trey Hanbury, Counsel to T-Mobile USA, Inc. to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-268 and AU Docket No. 14-252, at 2 (Apr. 14, 2016).

making spectrum available quickly in less complicated markets will allow carriers to deploy broadband service in those areas sooner rather than later.

T-Mobile and other competitive providers can deploy additional mobile broadband network capacity once 600 MHz band spectrum becomes available. Maintaining the current 39-month deadline and creating a multi-front clearing plan are two affirmative steps the Commission can take to minimize the amount of time 600 MHz spectrum is offline following the auction.

**B. A policy of technology neutrality in unlicensed bands enhances competition and promotes innovative services like LTE-U**

Wireless carriers are developing technologies to deliver LTE service over unlicensed spectrum to meet current data demands, but sustained investments in those technologies will occur only if the Commission confirms that they are permitted under the technology-neutral Part 15 rules.

LTE-U complies with the FCC's Part 15 rules and can coexist with other technologies operating in unlicensed bands, such as Wi-Fi, without causing harmful interference.<sup>19</sup> LTE-U relies on unlicensed spectrum to deliver more throughput to mobile broadband consumers. LTE-U protocols dynamically avoid Wi-Fi through spectrum-sensing capabilities that seek out unoccupied channels within a Wi-Fi band.<sup>20</sup> When the service cannot find an unoccupied

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<sup>19</sup> See Comments of T-Mobile USA, Inc., ET Docket No. 15-105, at 1 (June 11, 2015).

<sup>20</sup> See, e.g., *Ex Parte* Letter from LTE-U Forum and T-Mobile to Julius P. Knapp, Chief, Office of Engineering and Technology, FCC, ET Docket No. 15-105, at 2 (Sept. 9, 2015) ("LTE-U and T-Mobile Letter"); *Ex Parte* Letter from Patrick Welsh, Executive Director, Public Policy and Law, Verizon to Marlene H. Dortch, Secretary, FCC, ET Docket No. 15-105, at 1 (Oct. 2, 2015).

channel within the band, LTE-U uses an adaptive duty cycle to equitably share the spectrum with other unlicensed users.<sup>21</sup>

LTE-U proponents have worked with industry stakeholders to resolve a number of purported concerns with LTE-U's ability to coexist with Wi-Fi.<sup>22</sup> A battery of testing has also shown that LTE-U is a good spectrum neighbor to Wi-Fi.<sup>23</sup> Consumers stand to benefit from the expanded access to LTE service that LTE-U can provide, and carriers can start deploying the service once the Commission confirms that LTE-U is permissible. Continued delay in authorizing this efficient use of unlicensed spectrum harms consumers and jeopardizes the ability of the U.S. to lead in technology innovation.

**C. Releasing additional licensed spectrum for 5G deployment will provide operators the certainty necessary to finance and deploy next-generation networks**

Carriers require a mix of spectrum resources to satisfy demand. Next-generation mobile broadband technology will rely on low-, mid-, and high-band spectrum, including millimeter-wave spectrum, to supplement existing capacity and offer new services.<sup>24</sup> The licensing and technical rules the Commission adopted for the 28, 37, and 39 GHz spectrum bands will lay the foundation for 5G services.<sup>25</sup>

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<sup>21</sup> See LTE-U and T-Mobile Letter at 2.

<sup>22</sup> See Diana Goovaerts, *Regulatory Hurdles Could Delay Planned 2016 LTE-U Rollouts*, Wireless Week (May 23, 2016) (noting that Verizon and Qualcomm will use a draft co-existence test framework developed in collaboration with the Wi-Fi Alliance to demonstrate that LTE-U will not adversely affect Wi-Fi), <http://bit.ly/2cOd0XG>.

<sup>23</sup> See *id.*

<sup>24</sup> See *Eighteenth Mobile Competition Report* ¶ 47 (“As service providers deploy next-generation mobile networks, the engineering properties and deployment capabilities of the mix of particular spectrum bands have become increasingly important, particularly as multi-band phones allow service providers to take advantage of these different properties.”).

<sup>25</sup> See *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, et al.*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014 (2016) (“*Further Notice*”). Indeed, T-Mobile and Samsung are currently conducting 5G advanced beam-forming technology trials using pre-commercial systems in the 28 GHz



The Commission has acted with admirable speed in allocating this spectrum for mobile broadband use. But the next phase of the proceeding will grow more complex—and potentially more contentious—as the Commission develops detailed service rules for the new entrants and more specific safeguards for commercial and government incumbents in the band.<sup>26</sup> Pressing forward on the complex issues raised in the *Further Notice* will expand capacity and permit new services not possible with today’s more limited frequency resources. Rapid action to resolve the *Further Notice* will also provide the regulatory certainty network operators and equipment manufacturers need to invest in new technologies and services. T-Mobile is working with its vendors to test and develop 5G technology; early results indicate that the band will serve a critical role in meeting the demand for mobile broadband. With rapid advances in technology, the Commission should act quickly to establish service rules for additional 5G bands to help ensure a timely deployment of services.

Identifying additional bands as suitable for 5G will also help. The Commission has already sought comment on several additional bands that may also prove suitable for 5G, including 24.25-24.45 and 24.75-25.25 GHz, 31.8-33.4 GHz, 42-42.5 GHz, 47.2-50.2 GHz, 50.4-52.6 GHz, 71-76 GHz, and 81-86 GHz bands as potential candidate bands.<sup>27</sup> The Commission should also consider the 40-42 GHz band, which could provide a block of spectrum

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band spectrum. See Monica Allevan, *T-Mobile, Samsung Plan 5G Trials Using Pre-Commercial Systems at 28 GHz*, FierceWireless (Sept. 8, 2016), <http://bit.ly/2csb9am>.

<sup>26</sup> See *Further Notice* ¶¶ 369-516 (seeking comment on issues such as additional millimeter-wave spectrum bands to allocate for flexible use services, sharing frameworks necessary to allocate additional spectrum for flexible use, additional performance requirements for millimeter-wave spectrum bands, mobile spectrum holdings policies and advanced technical rules for use of the bands).

<sup>27</sup> See Comments of T-Mobile USA, Inc., GN Docket No. 14-177, at 6 (Jan. 27, 2016); *Ex Parte* Letter from Steve B. Sharkey, Vice President, Government Affairs Technology and Engineering Policy, to Marlene Dortch, Secretary, FCC, WT Docket No. 14-177 (May 9, 2016).

extending from 37.6-42.5 GHz.<sup>28</sup> And the MVDDS 5G Coalition has petitioned for a rulemaking to permit 5G deployments in the 12.2-12.7 GHz band,<sup>29</sup> which is lower in frequency and may permit more rapid, cost-effective deployments than other, higher-band spectrum.<sup>30</sup> Expeditiously identifying additional bands as suitable for 5G will accelerate the deployment of mobile broadband in the United States.

### **III. MOBILE BROADBAND COMPETITION PROMOTES BROADBAND ACCESS, AFFORDABILITY, AND CONSUMER CHOICE**

As the Chairman has recently recognized, competition and innovation in the broadband marketplace, particularly the 5G environment, largely rely on three inputs: (1) the availability of spectrum; (2) the competitive provisioning of infrastructure, specifically backhaul; and (3) efficient siting processes.<sup>31</sup> While T-Mobile commends the FCC's recent actions taken to foster a more suitable environment for competition and innovation,<sup>32</sup> the market for mobile broadband inputs remains concentrated and subject to the risk that dominant incumbents will exercise market power to increase prices, limit innovation, and impair consumer choice. Promoting competition among mobile broadband providers can help limit the potential for dominant incumbents to frustrate competitive entry and forestall innovation.

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<sup>28</sup> See Comments of T-Mobile USA, Inc., IB Docket No. 97-95, at 4-8 (Jan. 27, 2016); Reply Comments of T-Mobile USA, Inc., IB Docket No. 97-95, at 7-8 (Feb. 26, 2016).

<sup>29</sup> See MVDDS 5G Coalition, Petition for Rulemaking, RM-11768 (Apr. 26, 2016).

<sup>30</sup> See Comments of T-Mobile USA, Inc., RM-11768, at 3 (June 8, 2016) (agreeing with petitioners that "the Commission should initiate a rulemaking proceeding to determine whether two-way mobile broadband service can be authorized in the 12 GHz band consistent with the need to protect DBS.").

<sup>31</sup> Tom Wheeler, Chairman, FCC, Address at the Competitive Carriers Association Annual Convention (Sept. 20, 2016), <http://bit.ly/2cCSp5x> ("Chairman Wheeler's CCA Remarks"); Tom Wheeler, Chairman, FCC, Address at the CTIA Super Mobility Show 2016 (Sept. 7, 2016), <http://bit.ly/2cZUITC>.

<sup>32</sup> See, e.g., *Further Notice* (permitting mobile deployment in 28, 37, and 39 GHz bands); First Amendment to National Programmatic Agreement for the Collocation of Wireless Antennas, WT Docket No. 15-180, DA 16-900 (Aug. 8, 2016) (streamlining the historic review process for collocations of wireless communications facilities).

**A. Reasonable limits on spectrum aggregation will allow multiple competitors to access high-band spectrum**

As demand for data services continues to increase, wireless broadband providers will require higher-frequency spectrum to supplement network capacity for next-generation broadband services.<sup>33</sup> Acting to curb excessive concentration of higher-band spectrum now would allow the Commission to avoid the situation that currently exists in lower-band spectrum, which it has attempted to address through its mobile spectrum holdings and auction policies.<sup>34</sup> With high-band spectrum resources already unevenly distributed among competitors, the Commission has adopted some constraints on high-band spectrum concentration.<sup>35</sup> But more could be done. Adopting band-specific spectrum screens offers the Commission an opportunity to prevent excessive concentration of this critical input before it shapes the degree of competitive rivalry consumers experience in the market.<sup>36</sup> Because the industry is in the early stages of gaining experience with the substitutability of different bands of millimeter-wave spectrum, it will be important for the Commission to maintain oversight to ensure that a single operator cannot foreclose others from obtaining access to the most desirable bands.

In lower frequencies, meanwhile, robust enforcement of the existing low-band spectrum screen continues to remain an important element of accelerating broadband deployment,

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<sup>33</sup> Unlicensed spectrum and shared spectrum bands in the higher frequency ranges may also play a role in satisfying this need, but the foundation of reliable 5G wireless services will be dedicated, licensed spectrum. *See, e.g.*, T-Mobile Comments, WT Docket No. 16-137, at 12 (May 31, 2016).

<sup>34</sup> *See, e.g., Eighteenth Mobile Competition Report* ¶¶ 47, 62 (explaining that, even after recent acquisitions by other wireless carriers, AT&T and Verizon hold 73 percent of the available low-band spectrum).

<sup>35</sup> *Further Notice* ¶¶ 184-190.

<sup>36</sup> *See* Letter from Rebecca Murphy Thompson, General Counsel, Competitive Carriers Association, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177 et al., at 2-3 (June 7, 2016) (noting that “failure to protect against spectrum aggregation is harmful to competitive carriers who need access to upper centimeter and millimeter waver (‘mmW’) bands to deploy competitive offerings to consumers. This, in turn, could have the unfortunate impact of diminishing competition for 5G development.”); *Ex Parte* Letter from John Hunter, Sr. Director, Technology & Engineering Policy, T-Mobile, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177, at 3 (July 7, 2016).

especially given the limited prospects for additional low-band spectrum following the 600 MHz Incentive Auction. The “enhanced factor” standard of review for low-band spectrum transactions was designed to encourage competition and improve mobile broadband services by “ensuring that multiple providers are able to access a sufficient amount of low-band spectrum.”<sup>37</sup> The FCC has yet to deny a transaction under this standard.<sup>38</sup> The “enhanced factor” applications granted thus far typically involve rural and sparsely populated markets.<sup>39</sup> But meaningful application of the “enhanced factor” standard will be critical in populated areas as well as those communities where consumers have few competitive alternatives to the two dominant incumbents.

**B. Without the power to negotiate reasonable data roaming terms, competitive mobile providers will be less able to timely deploy 4G and 5G broadband services**

Carriers depend on data roaming to provide consumers with ubiquitous and seamless data services.<sup>40</sup> But the two dominant incumbents have the incentive and ability to raise data roaming prices above competitive levels and to take other steps to deter competitive entry and limit downward pressure on quality-adjusted prices.<sup>41</sup> Due to the disparity in bargaining power,

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<sup>37</sup> See, e.g., *Policies Regarding Mobile Spectrum Holdings; Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6133 ¶ 3 (2014).

<sup>38</sup> See, e.g., *Application of AT&T Mobility Spectrum LLC and Club 42CM Limited Partnership for Consent to Assign Licenses*, Memorandum Opinion and Order, 30 FCC Rcd 13055 (Nov. 10, 2015). Indeed, AT&T has filed 27 applications triggering enhanced-factor review, and the FCC has approved each it has reviewed.

<sup>39</sup> See *Ex Parte* Letter from Trey Hanbury, Counsel to T-Mobile USA, Inc. to Marlene H. Dortch, Secretary, FCC, WT Docket No. 15-79, at 2 (Jan. 19, 2016).

<sup>40</sup> See *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, Second Report and Order, 26 FCC Rcd 5411 ¶ 1 (2011), *aff’d sub nom. Cellco Partnership v. FCC*, 700 F.3d 534 (D.C. Cir. 2012).

<sup>41</sup> See generally Petition for Expedited Declaratory Ruling of T-Mobile USA, Inc., WT Docket No. 05-265, at 17-18 (May 27, 2014).

incumbents have foisted commercially unreasonable agreements on T-Mobile<sup>42</sup> and other carriers for years.<sup>43</sup> In an effort to address these issues, the Commission issued a ruling in 2014 providing additional guidance to carriers in this area and affirming that the “availability of roaming capabilities is and will continue to be a critical component enabling consumers to have a competitive choice of facilities-based providers offering nationwide access to mobile data services.”<sup>44</sup>

While the Commission has taken steps to strengthen its rules, the data roaming marketplace is still not functioning properly, and additional FCC intervention is needed to help ensure full, fair, and competitive access to data roaming essential for the deployment of broadband services. Specifically, the Commission should move ahead to reform data roaming requirements consistent with the reclassification of data roaming under Title II.<sup>45</sup>

As new, advanced broadband technologies have become available, AT&T and Verizon—the two “must-have” roaming partners—have continued to impose unacceptable roaming terms and conditions, impeding the competitive deployment of these technologies. Moreover, when carriers are required to pay exorbitant roaming rates to these must-have roaming partners, they have less capital to invest in networks and infrastructure build-out, which has a negative effect

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<sup>42</sup> See, e.g., *id.* at 19-21.

<sup>43</sup> See, e.g., Comments of Competitive Carriers Association, GN Docket No. 16-245, at 23 (Oct. 6, 2016).

<sup>44</sup> See *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Service*, Declaratory Ruling, 29 FCC Rcd 15483 ¶ 13 (2014).

<sup>45</sup> In its March 2015 Open Internet Order, the FCC reclassified mobile broadband as a Title II service. *Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd 5601 ¶ 5 (2015) (“2015 Open Internet Order”). The Commission decided to forbear from applying Title II to the current data roaming rules, but it specifically committed to begin a separate proceeding to revisit its data roaming obligations in light of the reclassification. *Id.* ¶ 526. The FCC should move forward and subject data roaming services to Title II requirements. See CCA Notice of *Ex Parte*, GN Docket, No. 14-28, WT Docket No. 05-265 (July 20, 2016). In this regard, T-Mobile commends the Chairman’s recent commitment to work with the other Commissioners and move forward with a rulemaking regarding the Commission’s data roaming framework before year-end. See Chairman Wheeler’s CCA Remarks at 1-2.

on broadband deployment and consumer access. Effective Title II rules are essential to the competitive marketplace and to the deployment and provision of LTE and 5G services needed by all consumers.

#### **IV. USAGE OF MULTIPLE BROADBAND MEASUREMENT METHODOLOGIES PERMITS A MORE ACCURATE ASSESSMENT OF BROADBAND PERFORMANCE**

The Commission should not rely solely on a single safe harbor to assess the state of mobile broadband deployment.<sup>46</sup> Selecting data sourced by the Mobile Measuring Broadband America program as the sole safe harbor for information disclosures required under the *2015 Open Internet Order*<sup>47</sup> unnecessarily narrowed the pool of available wireless network data.<sup>48</sup> The FCC's mobile speed test application data provides consumers with information about mobile broadband performance, but the Commission acknowledges that the application as designed can produce "biased results."<sup>49</sup>

While T-Mobile supports the use of crowd-sourced data, measurements are more reliable when they draw from diverse datasets and use various collection methodologies. Relying on a single data source could limit informed consumer choice and discourage private investment in data collection and information processing. Furthermore, a multiplicity of data sources lead to more detailed and accurate disclosures that benefit consumers. Allowing competing approaches

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<sup>46</sup> Cf. *Twelfth NOI* ¶ 62 (seeking comment on data sources and methodologies).

<sup>47</sup> *Guidance on Open Internet Transparency Rule Requirements*, Public Notice, 31 FCC Rcd 5330, 5335 (2016).

<sup>48</sup> See Letter from Bryan Darr, President and CEO of Mosaik, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-28, at 1 (July 15, 2016).

<sup>49</sup> Measuring Mobile Broadband Performance, FCC, <http://fcc.us/1SFduKv> (Sept. 29, 2014).

to flourish will give consumers more reliable, comprehensive information about mobile network performance.<sup>50</sup>

**V. PRIVACY AND CYBERSECURITY CONCERNS ARE BETTER ADDRESSED IN OTHER FORUMS AND THROUGH ALTERNATIVE MEANS**

The FCC should not consider privacy and cybersecurity as part of its analysis of whether broadband services are being reasonably and timely deployed.<sup>51</sup> Privacy and cybersecurity considerations are out of place in this proceeding because, as CTIA explained in its comments, the FCC has not shown a direct or substantial correlation between consumers’ privacy concerns and the adoption of broadband.<sup>52</sup> And as United States Telecom Association explained in its comments, factors such as privacy and security are “outside the scope of the core purpose of section 706” and their consideration here risks “distracting the Commission from focusing on increasing deployment and availability” of broadband.<sup>53</sup>

In any event, wireless carriers already have strong incentives to safeguard their customers’ personal information. In addition to state and federal privacy and data security laws, mobile broadband providers must meet consumer expectations in the competitive retail market for wireless broadband services. Consideration of non-speed factors such as privacy and cybersecurity in the FCC’s section 706 analysis is therefore not only inappropriate, but also unnecessary.

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<sup>50</sup> See generally Comments of Competitive Carriers Association, GN Docket No. 16-245, at 4-6 (Sept. 6, 2016).

<sup>51</sup> See *Twelfth NOI* ¶ 55 (asking “whether and, if so, how privacy and security concerns should be factored into our inquiry into the availability of advanced telecommunications capability and our determination as to whether it is being deployed to all Americans in a reasonable and timely fashion”).

<sup>52</sup> Comments of CTIA, GN Docket No. 16-245, at 26-27 (Sept. 6, 2016). In fact, the FCC’s proposed rules would create a burdensome privacy framework that may stifle innovation and impede broadband deployment. See *id.*

<sup>53</sup> Comments of United States Telecom Association, GN Docket No. 16-245, at 9 (Sept. 6, 2016).

## VI. CONCLUSION

The Commission can satisfy Congress's mandate to promote competition and deployment in several ways. *First*, making more high-, mid-, and low-band spectrum available will allow mobile broadband providers to keep pace with the dramatic growth of consumer demand. *Second*, by implementing and enforcing safeguards to avoid over-concentration of spectrum and critical input facilities by those that wield market power, the Commission can help ensure that consumers enjoy the benefits of competition. *Finally*, the Commission can promote innovation and experimentation through even-handed rules in the areas of unlicensed spectrum and mobile data measurements.

Respectfully submitted,

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